# SPEC® CINT2006 Result

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## Bull SAS

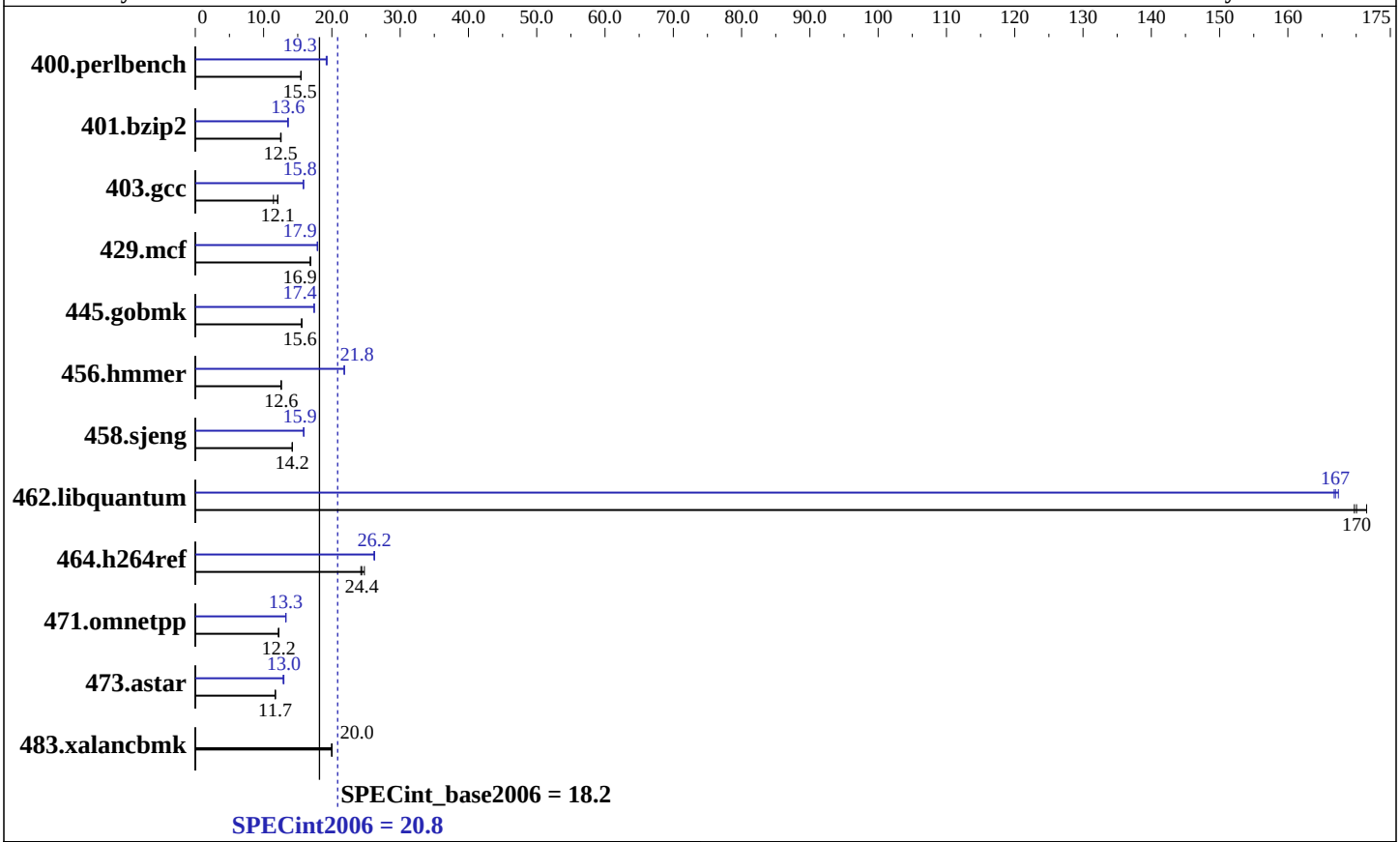
NovaScale R480 E1
(Intel Xeon E7210, 2.40 GHz)

SPECint®2006 = 20.8

SPECint_base2006 = 18.2

**CPU2006 license:** 20
**Test sponsor:** Bull SAS
**Tested by:** Bull SAS

**Test date:** Aug-2008
**Hardware Availability:** Jan-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7210 |
| CPU Characteristics: | 1066 MHz system bus |
| CPU MHz: | 2400 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 4 chips, 2 cores/chip |
| CPU(s) orderable: | 1 to 4 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 4 MB I+D on chip per core |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 24 GB (12x2 GB) FB-DIMM PC2-5300F ECC CL5 |
| Disk Subsystem: | 1x146 GB SAS, 10000 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE LINUX Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Binutils 2.17.50.0.15<br>SmartHeap library V8.1 |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 632 | 15.5 | **631** | **15.5** | 631 | 15.5 | 507 | 19.3 | 510 | 19.2 | **507** | **19.3** |
| 401.bzip2 | 773 | 12.5 | **770** | **12.5** | 768 | 12.6 | **710** | **13.6** | 710 | 13.6 | 713 | 13.5 |
| 403.gcc | 704 | 11.4 | **667** | **12.1** | 667 | 12.1 | 508 | 15.9 | 509 | 15.8 | **509** | **15.8** |
| 429.mcf | 542 | 16.8 | 540 | 16.9 | **541** | **16.9** | **510** | **17.9** | 509 | 17.9 | 511 | 17.9 |
| 445.gobmk | **673** | **15.6** | 673 | 15.6 | 673 | 15.6 | **602** | **17.4** | 603 | 17.4 | 602 | 17.4 |
| 456.hmmer | **741** | **12.6** | 741 | 12.6 | 742 | 12.6 | 428 | 21.8 | **428** | **21.8** | 427 | 21.8 |
| 458.sjeng | **851** | **14.2** | 854 | 14.2 | 851 | 14.2 | 762 | 15.9 | **762** | **15.9** | 762 | 15.9 |
| 462.libquantum | 121 | 172 | **122** | **170** | 122 | 170 | 124 | 167 | 124 | 167 | **124** | **167** |
| 464.h264ref | 913 | 24.2 | 894 | 24.8 | **908** | **24.4** | 843 | 26.3 | 846 | 26.2 | **843** | **26.2** |
| 471.omnetpp | 511 | 12.2 | 514 | 12.2 | **512** | **12.2** | **472** | **13.3** | 471 | 13.3 | 472 | 13.2 |
| 473.astar | **599** | **11.7** | 600 | 11.7 | 598 | 11.7 | 546 | 12.9 | **541** | **13.0** | 541 | 13.0 |
| 483.xalancbmk | 345 | 20.0 | 345 | 20.0 | **345** | **20.0** | 345 | 20.0 | 345 | 20.0 | **345** | **20.0** |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to null
```

## General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
BIOS settings :
Hardware Prefetcher :                Enabled
Adjacent Cache-Line Prefetch :       Enabled
```

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/spec/cpu2006/lib -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page

## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap

483.xalancbmk: basepeak = yes

# Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.xml`


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